

What is claimed is:

1. An isolated and/or purified polynucleotide which hybridises at high stringency to an oligonucleotide of 25 or more contiguous nucleotides of SEQ ID NO: 1 or SEQ ID NO: 3 and
 5 which polynucleotide codes for a) a MAS receptor or for a MAS signalling protein; or b) a ligand binding domain of a MAS receptor or MAS signalling protein.
2. The isolated polynucleotide of claim 1, wherein the MAS receptor or signalling protein has the ability to bind to 3 β -hydroxy-4,4-dimethylcholest-8,14,24-triene (FF-MAS).
- 10 3. The isolated polynucleotide of claim 1, which is a RNA antisense sequence.
4. The isolated polynucleotide of claim 1, which is a cDNA sequence.
- 15 5. The isolated polynucleotide of claim 1, which encodes a polypeptide displaying MAS receptor or MAS signalling protein activity.
6. The isolated polynucleotide of claim 1, which encodes a MAS receptor or MAS signalling protein comprising the amino acid sequence of SEQ ID NO: 2 or SEQ ID NO: 4.
- 20 7. The isolated polynucleotide of claim 1, comprising the sequence of SEQ ID NO: 1 or SEQ ID NO: 3.
8. A probe of at least 12 nucleotides, said probe being capable of hybridising with nucleic acids which encode a MAS receptor or MAS signalling protein.
- 25 9. The probe of claim 9, comprising an oligonucleotide or polynucleotide of 25 or more contiguous nucleotides of SEQ ID NO: 1 or SEQ ID NO: 3 capable of specifically hybridising with a gene which encodes a MAS receptor or MAS signalling protein, or allelic and species variants thereof.
- 30 10. The probe of claim 9, comprises from about 40 to about 60 nucleotides in length.

12. The probe of claim 9, which is labelled to provide a detectable signal.
13. The probe of claim 9, comprising the nucleotides of SEQ ID NO: 1 or SEQ ID NO: 3.
- 5 14. A DNA construct comprising a DNA sequence which hybridises at high stringency to an oligonucleotide or polynucleotide of 25 or more contiguous nucleotides of SEQ ID NO: 1 or SEQ ID NO: 3 and which encodes a) a MAS receptor or MAS signalling protein; or b) a ligand binding domain of a MAS receptor or MAS signalling protein.
- 10 15. The DNA construct of claim 14, wherein the DNA sequence encodes a MAS receptor or MAS signalling protein having the amino acid sequence of SEQ ID NO: 2 or SEQ ID NO: 4.
16. A cultured cell line, yeast or bacteria transformed or transfected with a DNA construct which comprises a DNA sequence which hybridises at high stringency to an oligonucleotide
15 or polynucleotide of 25 or more contiguous nucleotides of SEQ ID NO: 1 or SEQ ID NO: 3 and which encodes a) a MAS receptor or MAS signalling protein; or b) a ligand binding domain or a transmembrane domain of a MAS receptor or MAS signalling protein.
17. The cell line, yeast or bacteria of claim 16, which does not express endogenous MAS
20 receptor or MAS signalling proteins.
18. An isolated and/or purified MAS receptor or MAS signalling protein, or peptide fragment or salt thereof.
- 25 19. The isolated and/or purified protein of claim 18, comprising the amino acid sequence of SEQ ID NO: 2 or SEQ ID NO: 4, or a fragment of said amino acid sequence able to bind to FF-MAS.
20. An isolated antibody which specifically binds to a MAS receptor or MAS signalling pro-
30 tein.
21. The isolated antibody of claim 20, wherein said antibody is a monoclonal antibody.

22. The isolated antibody of claim 20, which blocks the binding of MAS to a MAS receptor or MAS signalling protein.

23. A hybridoma which produces the monoclonal antibody of claim 21.

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24. A method for detecting the presence of a compound or a salt thereof which has affinity for a MAS receptor or MAS signalling protein, comprising the steps of a) contacting the compound with the MAS receptor or MAS signalling protein, a peptide fragment thereof or a salt thereof; and b) measuring the affinity of said compound for the MAS receptor or MAS signalling protein.

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25. The method of claim 24, comprising the steps of a) exposing a compound in the presence of a MAS agonist including MAS to a MAS receptor or MAS signalling protein coupled to a response pathway under conditions and for a time sufficient to allow binding of the compound to the MAS receptor or MAS signalling protein and an associated response through the pathway; and b) detecting a reduction in the stimulation of the response pathway resulting from the binding of the compound to the MAS receptor or MAS signalling protein, relative to the stimulation of the response pathway by the MAS agonist alone and there from determining the presence of a MAS antagonist.

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26. The method of claim 24, comprising the steps of a) exposing a compound in the presence of a MAS antagonist to a MAS receptor or MAS signalling protein coupled to a response pathway under conditions and for a time sufficient to allow binding of the compound to the MAS receptor or MAS signalling protein and an associated response through the pathway; and b) detecting an increase of the stimulation of the response pathway resulting from the binding of the compound to the MAS receptor or MAS signalling protein, relative to the stimulation of the response pathway by the MAS antagonist alone and there from determining the presence of a MAS agonist.

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27. A compound or a salt thereof which has affinity for the MAS receptor or a MAS signalling peptide, detected by the method of claim 24.

28. A method for producing a MAS receptor or MAS signalling protein having the amino acid sequence of SEQ ID NO: 2 or SEQ ID NO: 4, which comprises a) growing cells, yeast or bacteria transformed or transfected with a DNA construct which comprises a DNA sequence of SEQ ID NO: 1 or SEQ ID NO: 3 coding for the expression of the MAS receptor or MAS signalling protein, and b) isolating the MAS receptor or MAS signalling protein from the cells.

29. The method of claim 28, wherein the MAS receptor or MAS signalling protein is isolated by immunoaffinity purification.

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30. A kit for screening a compound or a salt thereof which has affinity for a MAS receptor or MAS signalling protein, which contains the MAS receptor or MAS signalling protein, the peptide fragment thereof or a salt thereof.

31. A MAS receptor, which comprises the amino acid sequence shown in SEQ ID NO: 2, or an analogue thereof binding FF-MAS, with an affinity constant below 100 μM , preferably below 10 μM .

32. The MAS receptor of claim 31, with the proviso that it is different from the amino acid sequence in SEQ ID NO: 6 and 8.

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33. A DNA sequence encoding the MAS receptor of claim 32.

34. A MAS receptor, which comprises the amino acid sequence shown in SEQ ID NO: 4, or an analogue thereof binding FF-MAS, with an affinity constant below 100 μM , preferably below 10 μM .

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35. The MAS receptor of claim 34, with the proviso that it is different from the amino acid sequence in SEQ ID NO: 6 and 8.

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36. A DNA sequence encoding the MAS receptor of claim 35.

37. A MAS receptor, which comprises the partial amino acid sequence shown in SEQ ID NO: 6, or an analogue thereof binding FF-MAS, with an affinity constant below 100 μM , preferably below 10 μM .

- 5 38. The MAS receptor of claim 35, with the proviso that it is different from the amino acid sequence in SEQ ID NO: 6 and 8.

39. A MAS receptor, which comprises the partial amino acid sequence shown in SEQ ID NO: 8, or an analogue thereof binding FF-MAS, with an affinity constant below 100 μM , preferably
10 below 10 μM .

40. The MAS receptor of claim 37, with the proviso that it is different from the amino acid sequence in SEQ ID NO: 6 and 8.

- 15 41. A DNA construct which comprises a DNA sequence encoding a MAS receptor or a functional analog thereof, with the proviso that it is different from the nucleotides of SEQ ID NO: 5 and 7.

42. A DNA construct comprising the DNA sequence shown in SEQ ID NO: 1, or a fragment
20 thereof, or a DNA sequence encoding a functional analogue thereof binding FF-MAS, with an affinity constant below 100 μM , preferably below 10 μM .

43. The DNA construct of claim 42, with the proviso that it is different from the nucleotides of SEQ ID NO: 5 and 7.

- 25 44. A DNA construct comprising a DNA sequence shown in SEQ ID NO: 5, or a DNA sequence coding for a functional analogue thereof binding FF-MAS, with an affinity constant below 100 μM , preferably below 10 μM .

30 45. The DNA construct of claim 44, with the proviso that it is different from the nucleotides of SEQ ID NO: 5 and 7.

46. A method of screening for ligands to a MAS receptor, the method comprising incubating a MAS receptor with a substance suspected to be an agonist or antagonist of FF-MAS, and subsequently with FF-MAS, or an analogue thereof, and detecting any effect of binding of FF-MAS, or the analogue to the MAS receptor.

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47. A method of screening for ligands to the MAS receptor, the method comprising incubating FF-MAS, or an analogue thereof with a substance suspected to be an agonist or antagonist of activity of FF-MAS, and subsequently with a MAS receptor according to any one of the preceding claims to a MAS receptor, and detecting any effect of binding of FF-MAS, or the analogue

10 to the receptor.

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